

# Implementing PCV2 vaccination resulting in reduction of antibiotic use on Dutch farrow-to-finish farm

R. Aerts <sup>\*1</sup>

N. Wertenbroek<sup>2</sup>

<sup>1</sup>Veterinary practice Lintjeshof, Nederweert, The Netherlands;

<sup>2</sup>Boehringer Ingelheim Vetmedica, Alkmaar, The Netherlands

\* Veterinary practice Lintjeshof, Pannenweg 200, Nederweert, The Netherlands;

email: r.aerts@lintjeshof.com; +31-495461222

## Abstract

The antibiotic use in the food producing animals is of a growing concern for consumers, human health care, politicians and retail. Also the food producing sector itself is looking for (economical) alternatives for these treatments. One of the tools of reducing antibiotics are vaccinations. Production data of a 500 sow farm with 1900 fattening places was retrospectively reviewed for the period January 2009 till December 2010. The fattening unit had a history of diarrhea (Salmonella and Brachyspira negative, Lawsonia positive). Other clinical signs included an increased number of runts, pigs growing apart, and a high mortality (including euthanasia). There were no lung problems involved. The general treatment was to medicate with tiamulin on a regular basis in the fattening unit. Investigation on blood samples from several runts (mid fattening), showed high levels of PCV2 virus load. In July 2009 the farm started with vaccinating Ingelvac CircoFLEX<sup>®</sup> (1 ml) at 3 weeks of age. Continuous flow data of the fatteners was used for evaluation: 8 months before vaccination (total of 2869 pigs) were compared to 12 months in which only vaccinated pigs were present on the farm (5933 pigs). The transition period lasted from September to December (1944 pigs) with vaccinated and non-vaccinated being present in the finishing unit at the same time. The mortality was reduced by 46 % (4,03 vs 2,15%), comparing non-vaccinated versus Ingelvac CircoFLEX<sup>®</sup> vaccinated pigs; the health status and uniformity was improved (less runts), so less pigs needed to be transferred to another (younger) compartment. Also very evident was the reduction in antibiotic use by 85 % (40,61 vs 6,47 Defined Daily Dosage). These results suggest that there are situations where PCV2 vaccination can decrease the use of antibiotics and improve the production and economical performance.

## Introduction

The antibiotic use in the food producing animals is of a growing concern for consumers, human health care, politicians and retail (1, 2). Also the food producing sector itself is looking for (economical) alternatives for these treatments. The Netherlands is among the countries with the highest antibiotic use in food producing animals in the EU (3, 4). Recently the Dutch government issued the goal of a 50% reduction on the use of antibiotics by 2013 compared to 2009 (5). One of the tools of reducing the usage of antibiotics are preventive measurements such as vaccinations. The objective of this study was to evaluate the effect of a PCV2 vaccination on the antibiotic use under field conditions.

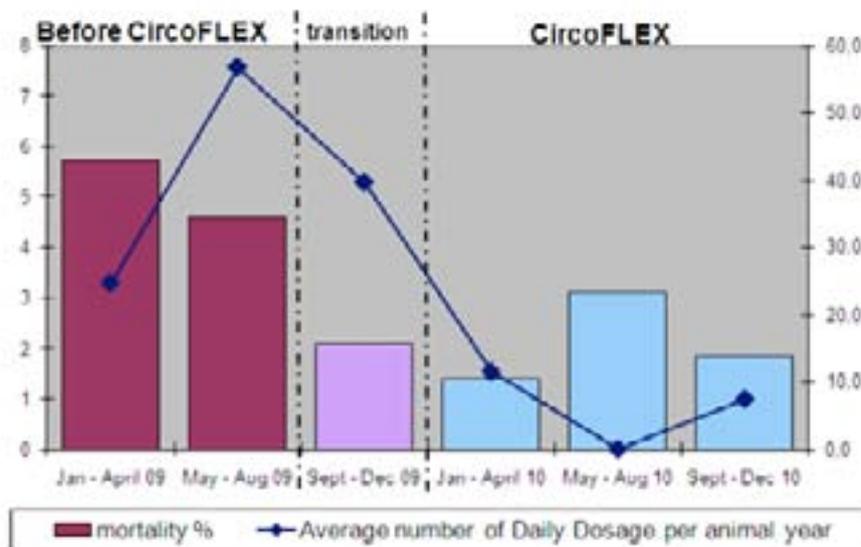
## Material and Methods

Production data of a 500 sow farm with 1900 fattening places was retrospectively reviewed for the period January 2009 till December 2010. The fattening unit had a history of diarrhea (Salmonella and Brachyspira negative, Lawsonia positive). Other clinical signs included an increased number of runts, pigs growing apart, and a high mortality (including euthanasia). There were no lung problems involved. The general treatment was to medicate with tiamulin on a regular basis in the fattening unit. Investigation on blood samples from several runts (mid fattening), showed high levels of PCV2 virus load. In July 2009 the farm started with vaccinating Ingelvac CircoFLEX<sup>®</sup> (1 ml) at 3 weeks of age. Continuous flow data of the fatteners was used for evaluation. 8 months before vaccination (total of 2869 pigs) were compared to 12 months in which only vaccinated pigs were present on the farm (5933 pigs). The transition period lasted from September to December (1944 pigs) with vaccinated and non-vaccinated being present in the finishing unit at the same time. The parameters mortality and antibiotic use were monitored. For evaluation and comparison of the antibiotic usage in time, the standardized method of Defined Daily Dosage (DDD) of antibiotics used per animal year was applied (4, 6, 7).

## Results

The mortality was reduced by 46 % (4,03 vs 2,15%; fig 1), comparing non-vaccinated versus Ingelvac CircoFLEX® vaccinated pigs. For the vaccinated pigs it was not needed to treat them with antibiotics for diarrhea anymore and as a result of this there was a reduction in antibiotic use by 85 % (40,61 vs 6,47 DDD per animal per year; fig 1).

Figure 1: Mortality (%) and average DDD per animal year in the fattening unit for the 6 periods of 4 months



## Discussion and conclusion

This retrospective analysis of a Dutch pigfarm demonstrates that the use of a 1 dose PCV2 vaccine around weaning can improve performance and improve animal welfare. The health status of the farm and the uniformity of the pigs improved (less runts), so less pigs needed to be transferred to another (younger) compartment or euthanized. These results suggest that there are situations where PCV2 vaccination decreases the use of antibiotics and improve the production and economical performance. Similar findings are confirmed in other reports (8,9).

## References

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